

REMARKS

Claims 1, 3, 6-15, 18 and 19 are pending in this application. By this Amendment, claims 1, 6, 7, 9, 11, 14, 15 and 18 are amended. The above amendments introduce no new matter. Reconsideration of the application in view of the above amendments and the following remarks is respectfully requested.

I. Objection to Drawings

The Office Action objects to the drawings for failing to show all of the claimed features. This objection is respectfully traversed.

Applicants amend the drawings to show the feature a second drive shaft that has four segments with each segment having a roller, as recited in claim 11. As discussed in further detail below, support for this amendment can be found in lines 10-14 of paragraph [0026], and lines 1-5 of paragraph [0029], of the specification. Applicants respectfully request withdrawal of the objection.

II. Objection to Claim 6

The Office Action objects to claim 6 because of a minor informality. This objection is respectfully traversed.

Regarding the objection to claim 6, the Office Action asserts that in line 2, the word "is" should be "are." Applicants amend claim 6 to recite "are," as suggested by the Office Action. Applicants thus submit that the amendment overcome the objection. Applicants respectfully request withdrawal of the objection.

III. Rejection of Claim 11 under 35 U.S.C. §112, first paragraph

The Office Action rejects claim 11 under 35 U.S.C. §112, first paragraph for failing to comply with the written description requirement. This rejection is respectfully traversed.

Regarding the §112, first paragraph rejection, the Office Action asserts that claim 11 fails to comply with the written description requirement. Specifically, the Office Action

asserts that the specification fails to disclose: (1) a second drive shaft having four segments each with a roller; and (2) a second drive shaft with inclined segments and two outermost segments that are parallel to the first drive shaft.

Applicants submit that that the specification provides at least broad descriptions of these features. For example, regarding (1), lines 10-14 of paragraph [0026], and lines 1-5 of paragraph [0029], of the specification, provide an adequate description of these features as required by §112, first paragraph. Specifically, lines 10-14 of paragraph [0026] describe pairs of segments of the drive roller 19 and the driven roller 20 being provided in four places on the drive shaft 29 (first drive shaft) and the support shaft 30 (second drive shaft). Furthermore, lines 1-5 of paragraph [0029] describe the segments of the driven roller 20 as being arranged symmetrically with two segments on each side of the centerline O and axes 20a of the driven roller 20 segments (axes of the support shafts) are arranged so they are non perpendicular.

Regarding (2), on page 4 of the Office Action, the Examiner asserts that paragraph [0035] of Applicants' specification does not describe a single shaft having both parallel roller and slanted roller segments. We note, however, that claim 11 does not recite a single shaft. Accordingly, the specification need only broadly describe a shaft that has a parallel roller segments and slanted roller segments. Paragraph [0033], of the specification, provides an adequate description of these features, as required by §112, first paragraph. Specifically, paragraph [0033] describes the innermost segments being on a slant, and the outermost segments being parallel to the Y-axis direction.

Moreover, the Patent Office Guidelines to Examiners provides that original claims constitute their own description. See, for example, MPEP §2163. In other words, the original claims themselves are enough to satisfy the written description requirement, as required by §112, first paragraph. As such, Applicants submit that the written description requirement is satisfied in that the features "a second drive shaft having four segments each with a roller,"

and "a second drive shaft with inclined segments and two outmost segments that are parallel to the first drive shaft," are supported by at least original claim 17.

Accordingly, for the at least the above reasons, claim 11 complies with the written description requirement of §112, first paragraph. Applicants thus respectfully request withdrawal of the §112, first paragraph rejection of claim 11.

IV. Rejection of Claims 1, 7, 9, 11, 14, 15 and 18 under 35 U.S.C. §112, second paragraph

Regarding the §112, second paragraph rejection, the Office Action asserts that:

- (1) in claim 1, lines 17-19, it is not clear how "the axes of the segments of the driven roller unit arranged on one side of the center of the width of the sheet to be fed are aligned on each side of the center of the width of the sheet to be fed";
- (2) there is no antecedent basis for the term "the segments of the driven roller," recited in line 3 of claim 7;
- (3) there is no antecedent basis for the term "axis" in line 1 of claim 9;
- (4) in claim 11, line 6, "a second drive shaft having at least two segments" is claimed and in line 9 "the second drive shaft has four segments." Does the second drive shaft have at least two segments, four segments, or at least two and no more than four segments;
- (5) in claim 11, lines 6 and 7 recite "each segment inclined relative to the first drive shaft," and lines 10 and 11 recite "the two outermost segments parallel to the first drive shaft." It is indefinite if the segments are to be inclined relative to the first drive shaft or are to be parallel to the first drive shaft;
- (6) in claim 14, line 3, it is indefinite if "a driven roller" is the same roller from claim 11, line 8, or a different roller. It is also unclear if "a segment of the drive roller" in line 3 is part of the "plurality of segments" in line 2; and
- (7) in claims 15 and 18, lines 2-4 and 9-12, it is unclear what is meant by the recitation "a centermost end of a second drive shaft segment one of more upstream and more downstream in the recording medium feed direction than the first drive shaft and the other end of such second drive shaft segment one of more downstream and more upstream than the first drive shaft."

Regarding assertion (1) above, Applicants amend claim 1 to recite "wherein an axis of a segment of a driven roller unit arranged on one side of the center of the width of the sheet to

be fed is aligned with an axis of a segment of a driven roller unit arranged on the other side of the center of the width of the sheet to be fed." Support for this amendment can be found in the specification, for example, at least in paragraph [0033], of the specification, and in Fig. 6C.

Regarding assertion (2) above, Applicants amend claim 7 to recite "the driven roller segments of the driven roller."

Regarding assertion (3) above, Applicants amend line 1 of claim 9 to recite "an axis."

Regarding assertions (4) and (5) above, Applicants amend claim 11 to recite "a second drive shaft having four segments, the two innermost segments inclined relative to the first drive shaft and the two outermost segments parallel to the first drive shaft."

Regarding assertion (6) above, Applicants amend line 3 of claim 11 to recite "the driven roller and the segment of the drive roller comprising a conveying pair."

Regarding assertion (7) above, Applicants amend claims 15 and 18 to recite "wherein the inclination places a centermost portion of a second drive shaft segment, the centermost portion being one of more upstream and more downstream in the recording medium feed direction than the first drive shaft, and the outermost portion of such second drive shaft segment, the outermost portion being one of more downstream and more upstream than the first drive shaft." Support for this amendment can be found in the specification, for example, in paragraph [0029], and in Figs. 6A and 6B.

Applicants submit that the amendments to claims 1, 7, 9, 11, 15 and 18 overcome the rejection. Applicants respectfully request withdrawal of the rejection.

V. Rejection of Claims 11, 12, 15, 18 and 19 under 35 U.S.C. §102(b)

The Office Action rejects claims 11, 12, 15, 18 and 19 under 35 U.S.C. §102(b) over JP 2000-318904 to Kawano et al. (hereinafter "Kawano"). This rejection is respectfully traversed.

Applicants submit that the Office Action overly broadly construes Kawano. For example, the Office Action asserts that Kawano anticipates claim 11 because it allegedly discloses a drive shaft 15 that is perpendicular to a feed direction, and another shaft 16 that has four segments, each segment inclined at an angle. However, as argued in our June 8, 2007 Amendment, Kawano merely discloses that the follower roller means 16 includes revolving shafts 16a that are arranged with their axes disposed at a slant on both sides of the center of the width of the sheet to be fed. As such, Kawano fails to disclose or suggest "a second drive shaft having four segments, the two innermost segments inclined relative to the first drive shaft and the two outermost segments parallel to the first drive shaft."

The Office Action asserts that Kawano anticipates claim 18 because it allegedly discloses a centermost end of the shaft segment 16B being more downstream than the ends of the shaft 16C. However, Kawano merely discloses that the follower roller means 16 includes revolving shafts 16a that are arranged with their axes disposed at a slant on both sides of the center of the width of the sheet to be fed. Accordingly, Kawano fails to disclose or suggest "wherein the inclination places a centermost portion of a second drive shaft segment one of more upstream and more downstream in the recording medium feed direction than the first drive shaft and the outermost portion of such second drive shaft segment one of more downstream and more upstream than the first drive shaft."

Accordingly, for the reasons discussed above, Applicants respectfully request withdrawal of the rejection of claims 11 and 18. Further, Applicants also respectfully request the withdrawal of the rejection of claims 12 and 15, and claim 19, for at least the dependence of these claims on claims 11 and 18, respectively, as well as for the additional features each of these claims recite.

VI. Rejection of Claims under 35 U.S.C. §103(a)

The Office Action rejects claims 1, 3, 6-8 and 10 under 35 U.S.C. §103(a) over U.S. Patent No. 3, 666,262 to Fowler et al. (hereinafter "Fowler") in view of U.S. Patent No. 6,073,927 to Sako et al. (hereinafter "Sako"); rejects claim 9 under 35 U.S.C. §103(a) over Fowler in view of Sako and further in view of Kawano; and rejects claims 13 and 14 under 35 U.S.C. §103(a) over Kawano in view of Sako. These rejections are respectfully traversed.

Claim 1 recites "wherein an axis of a segment of a driven roller unit arranged on one side of the center of the width of the sheet to be fed is aligned with an axis of a segment of a driven roller unit arranged on the other side of the center of the width of the sheet to be fed." The alleged combination of Fowler and Sako fails to disclose this feature.

For example, Fowler merely discloses drive rollers 8 and 10 that are arranged with their axes disposed at a slant on both sides of the center of the width of the sheet to be fed. Further, Sako does not remedy the deficiencies of Fowler. Sako is only relied upon for allegedly disclosing a coefficient of friction of an outer layer of a driven roller being smaller than a coefficient of friction of an outer layer of a drive roller.

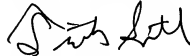
Accordingly, for the reasons discussed above, Applicants respectfully request withdrawal of the rejection of claim 1. Further, Applicants also respectfully request the withdrawal of the rejection of claims 13 and 14, for at least the dependence of these claims on claim 11, as well as for the additional features each of these claims recite. Further, withdrawal of the rejection of claim 9 is also respectfully requested, as Kawano is not applied in a manner that would overcome of the above-identified shortfalls in the application of the combination of Fowler and Sako to the subject matter of at least independent claim 1.

VII. Conclusion

In view of at least the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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JAO:TSS/hms

Attachment:
New Drawing Sheet

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